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Serial No. 10/736,354
Response to Official Action

In the Drawings

There are no amendments to the drawings.

Remarks

Applicant has amended Claims 1, 15, 17, 28 and 36, and cancelled Claim 16. Applicant respectfully submits that no new matter was added by the amendment, as all of the amended matter was either previously illustrated or described in the drawings, written specification and/or claims of the present application. Entry of the amendment and favorable consideration thereof is earnestly requested.

35 U.S.C. § 103 Rejections

Claim 1 recites “at least one wire extending from said first link member to said second link member controlling the movement of said first and second link members, said at least one wire including a preload so as to maintain said link assembly under tension” and an “elastomer is disposed between . . . the first and second link members whereby the layer is sufficiently thin and is maintained under compression by said at least one wire such that a bending movement between the members produces shear movement within the elastomer and substantially no compressive movement as a result of the relative movement between the said first and said second members.” In addition, Claim 36 recites “at least one wire extending from said first link member to said third link member controlling the movement of said first and third link members, said at least one wire including a preload so as to maintain said link assembly under compression” and “said elastomeric material maintained under tension or compression by said at least one wire such that substantially no compressive deformation of said elastomeric material occurs during rotation of said third link about the point of rotation relative to said first

link.” Applicant submits that these limitations are not disclosed, taught or suggested in the cited references.

For example, U.S. Patent No. 3,266,059 (Stelle) fails to teach, disclose or suggest use of an “elastomer” or an “elastomeric material” positioned between two rotatable joints as required by Claims 1 and 36. Also, Stelle fails to teach or suggest provision of at least one wire that provides a preload on the link members and compresses the elastomer or elastomeric material as required by the claims.

The Examiner has stated, however, that U.S. Patent No. 5,297,874 (Raines) “discloses a thin plurality of elastomeric layer (polymides, Kevlar, etc.) forming a bearing surface between relatively movable parts” and that it “would have been obvious . . . to have utilized the bearing structure of Raines . . . between the links of Stelle . . . so as to protect the links from overstress due to outside stimuli.” (Official Action 3/23/06, p. 2) Applicant disagrees.

Raines teaches use of a “heavy duty elastomeric bearing” for use in the construction of, for example, “the construction of underwater oil well pipelines connecting to a floating structure” so as to “accommodate the effect of movement of a floating platform relative to the sea bed without undue strain on interconnecting pipework.” (Abstract; Col. 1, lines 12-17.) Additionally, Raines teaches that the invention may also be used in connection with, for example, “heavy duty elastomeric bearing . . . in relation to tether lines for mooring floating platform structure.” (Col. 1, lines 18-20.)

The present invention relates to a robotic arm assembly that may be used to perform very precise and critical movements, for example, inside engines, machines and the like. (See, specification pp. 2-3.) Accordingly, there is no need to “protect the links from overstress due to outside stimuli” such as movement of a floating structure relative to the ocean floor as taught by Raines and suggested by the Examiner.

It is well settled that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01; *In re Gordon*, 733 F.2d 900, 221 USPQ2d 1125 (Fed. Cir. 1984). In the present case, Applicant respectfully submits that modification of Stelle to include the “heavy duty elastomeric bearing” of Raines would produce a robotic arm that would not be deflectable. Rather, if one were to apply the teachings of Raines to Stelle, one would arrive at a robotic arm that includes a “heavy duty elastomeric bearing” including “a plurality of reinforcing interleaves of substantially rigid material.” (Col. 1, line 66 – Col. 2, line 1.) In fact, Raines teaches that “at a minimum the invention provides an elastomeric bearing in which only two reinforcing interleaves are provided” but that “it is envisaged that typically the elastomeric bearing shall comprise at least seven and more typically at least twelve reinforcing interleaves.” (Col. 2, lines 14-21.) This enormous bearing positioned between the link members of Stelle would produce a robotic arm that would be immovable. Accordingly, such a combination cannot be obvious.

In addition, the Examiner has submitted that “there would be little or no compressive loads . . . during relative movement of the combination of Stelle in view of Raines that would create compressive loads, such that the broadly recited “substantially no compress movement” is met.” (Official Action 3/23/06, p. 4) Of course Applicant agrees that the compressive loads encountered by the robotic arm assembly for use in highly precise application would not approach those generated between a floating platform and the ocean floor and that substantially not compressive movement would be the case with the heavy duty bearing. However, there would also be no shear movement possible as the forces necessary to create such movement of the Raines “heavy duty elastomeric bearing” simply could not be generated by the robotic arm assembly of Stelle.

The Examiner has further stated that “the Raines reference is a bearing surface, and bearing surfaces are ubiquitous to most mechanical devices, therefor to utilize its teaching within Stelle is obvious and proper.” (Official Action 3/23/06, p. 4) Applicant disagrees.

First, such a modification of Stelle according to Raines renders the device in Stelle unsatisfactory for its intended purpose and the case law has clearly stated that such a combination cannot be obvious. *In re Gordon*, 733 F.2d 900, 221 USPQ2d 1125 (Fed. Cir. 1984).

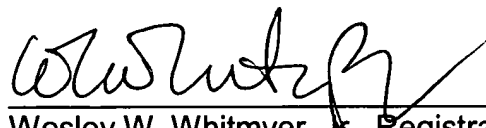
Second, it is well settled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See, e.g., MPEP 2143.01 ("The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination."); *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990) (fact that prior art "may be capable of being modified to run the way the apparatus is claimed, there must be some suggestion or motivation in the reference to do so."). In the present case, Applicant respectfully submits that there is absolutely no suggestion in Stelle that an elastomeric material may or should be positioned between the links. Additionally, there is absolutely no suggestion in Raines that the "heavy duty elastomeric bearing" may be used in a robotic arm assembly, in fact, it simply cannot be used for such. The case law clearly states that "[t]here must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself." *In re Oetiker*, 977 F.2d, 1443, 1447 (Fed. Cir. 1992). See also *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991) (suggestion to combine must be found in the prior art, not the applicant's disclosure). Applicant submits that the cited art provides no motivation for the suggested combination, rather, the Examiner is improperly using the pending claims as a roadmap to pick and choose diverse features from unrelated references and has characterized the combination as obvious.

Applicant further submits that the pending claims further require at least one wire, which exerts a preload on the link members and is used to control the link members. These limitations are not taught or disclosed by the cited references. Accordingly, even if one were to combine the references as suggested by the Examiner, one would not arrive at the presently claimed invention and as such no combination of the cited art can render the pending claims obvious.

It is respectfully submitted that claims 1-2, 4, 6-13, 15, 17-26 and 28-36, all of the claims remaining in the application, are in order for allowance and early notice to that effect is respectfully requested.

Respectfully submitted,

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